

THREE NEW SPECIES OF THE SUBGENUS *DISTICHALIUS* OF THE GENUS *QUEDIUS* FROM SICHUAN, CHINA (COLEOPTERA, STAPHYLINIDAE, STAPHYLININAE)

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Abstract Three new species of the subgenus *Distichalius* of the genus *Quedius* from Sichuan, China, *Quedius (Distichalius) wangi*, *Q. (D.) xian*, and *Q. (D.) wolong* are described and illustrated. *Q. (D.) lin* Smetana and *Q. (D.) pretiosus* Sharp are recorded for the first time from the mainland China and the Chongqing municipality. The first three species belong to the *kashmirensis* group of the subgenus and the fourth and fifth are members of the *ametens* and the *chaterjei* groups.

Key words Staphylinidae, *Quedius*, subgenus *Distichalius*, *kashmirensis* group, *ametens* group, *chaterjei* group, new species, China.

In this paper, three new species of the subgenus *Distichalius* of the genus *Quedius* from Sichuan, China, *Quedius (Distichalius) wangi*, *Q. (D.) xian*, and *Q. (D.) wolong* are described and illustrated. Among them, *Q. (D.) wangi* from Dafending Nature Reserve, Mabian County, *Q. (D.) xian* from Mt. Emei, and *Q. (D.) wolong* from Wolong Nature Reserve, Wenchuan County. *Q. (D.) lin* Smetana and *Q. (D.) pretiosus* Sharp are recorded for the first time from the mainland China and the Chongqing municipality. The first three species belong to the *kashmirensis* group of the subgenus and the fourth and fifth are members of the *ametens* and the *chaterjei* groups.

The *kashmirensis* group is a new recorded species-group in China, it is characterized by the punctuation of the elytra, which evenly covers the entire elytra surface, and might be identical with the *marginalis* group in the Nearctic Region (Smetana, 1988: 227).

All type specimens are deposited in the Life Science College, China West Normal University, Nanchong, Sichuan, China.

The *kashmirensis* group

Quedius (Distichalius) wangi sp. nov. (Figs. 1–7, 24)

Diagnosis. The species is similar to *Quedius (Distichalius) kashmirensis* Cameron from the Himalayan region, but can be recognized by the characteristic coloration of the body, the distinctive shape of the aedeagus, and the smaller body.

Description. Head black; pronotum brownish black, the sides broadly, anterior and posterior margins narrowly, obscurely brownish yellow; elytra brownish yellow; abdomen brownish black, posterior margins of tergites narrowly brownish yellow; antennae, maxillary and labial palpi, and legs brownish yellow to brownish

black; pubescence brown to brownish black.

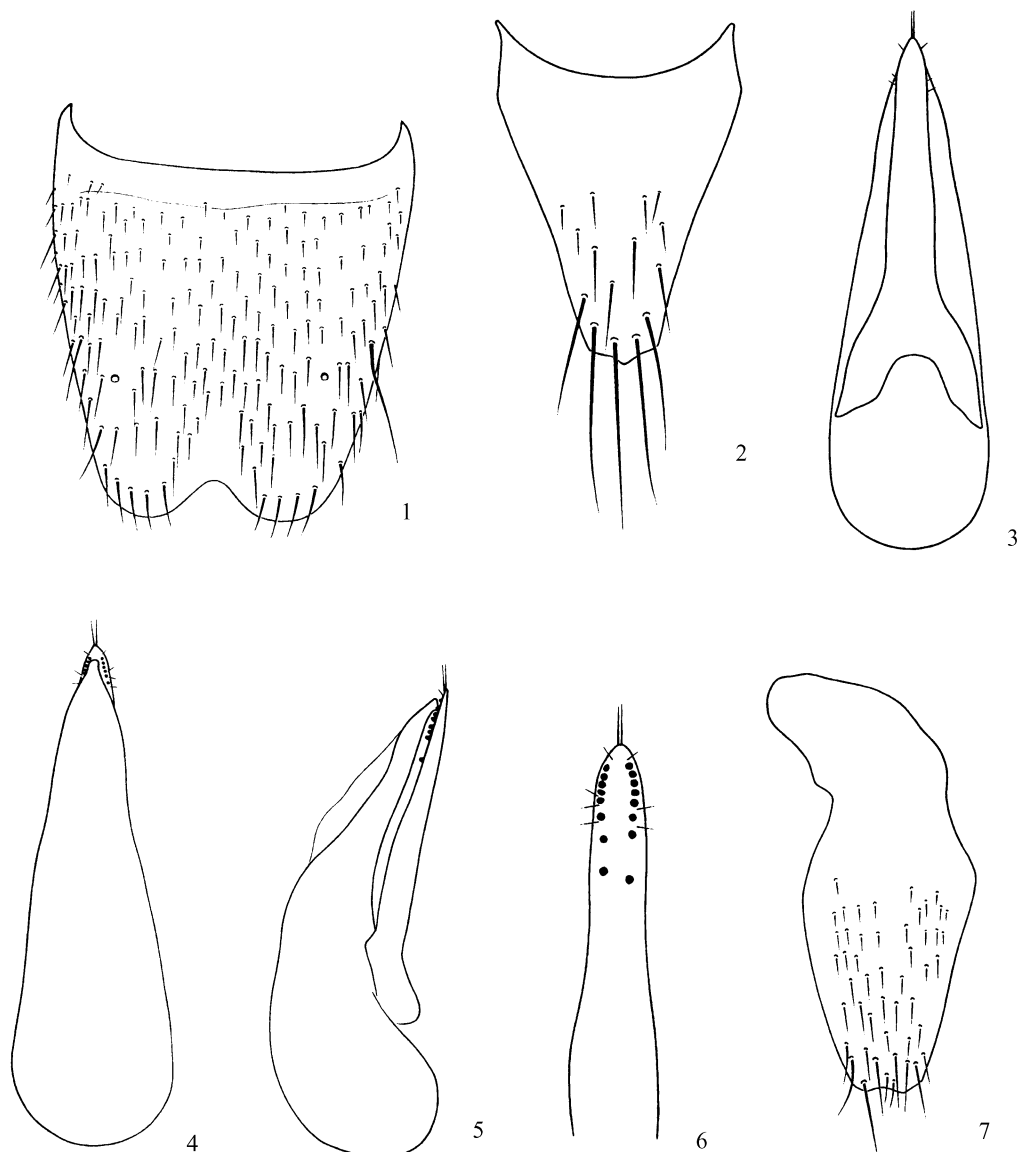
Length 5.7 mm.

Head subrounded, wider than long (ratio 1.25), distinctly narrowed posteriorly behind eyes, posterior angles obtuse; eyes large and convex, temples shorter than eyes (ratio 0.47); clypeus impunctate, with one slightly deep, small round impression; two additional setiferous punctures between anterior frontal punctures, anterior frontal puncture almost against inner margin of eye, posterior frontal puncture close to posterior inner margin of eye, separated from it by distance about as wide as diameter of puncture, large temporal puncture situated closer to posterior margin of head than to posterior margin of eye, two punctures between posterior frontal puncture and posterior margin of head, temple and inner side of posterior frontal puncture each with one small puncture; surface of head with fine and dense microsculpture consisting of transverse waves. Antenna longer, but not reaching posterior margin of pronotum, segments 1–3 elongate and dilated apically, segments 4–5 distinctly longer than wide, segments 6–10 about as long as wide, last segment shorter than two preceding segments combined (ratio 0.53) and bluntly acute at apical portion.

Pronotum wider than head (ratio 1.27), slightly wider than long (ratio 1.08), widest at about middle and subarcuately narrowed anteriorly than posteriorly, anterior angles angulate, posterior rounded, lateral portions not flattened, finely bordered; dorsal rows and sublateral rows each with three punctures, one setiferous puncture between each dorsal and sublateral row, posterior puncture of sublateral rows situated behind level of large lateral puncture; microsculpture similar to that on head, but finer and denser.

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Figs 1-7. *Quedius* (*Distichalius*) *wangi* sp. nov., male. 1. Sternite 8. 2. Tergite 10. 3-6. Aedeagus (3. Ventral view. 4. Dorsal view. 5. Lateral view. 6. Apical portion of underside of paramere). 7. Sternite 9.

Scutellum impunctate, with extremely fine microsculpture consisting of transverse striae.

Elytra subquadrate, longer (ratio 1.19) and wider (ratio 1.17) than pronotum, feebly broader than long (ratio 1.08), slightly widened posteriad; punctuation and pubescence finer and slightly sparse, with distinct microsculpture of meshes interspace between punctures.

Legs with segments 1-4 of protarsus strongly widened.

Abdomen with tergite 7 bearing whitish apical fringe, punctuation of abdominal tergites slightly finer than that on elytra, pubescence similar to that on elytra, transverse microsculpture extremely fine and dense.

Male. Sternite 8 with two long setae on each side, with moderately wide and deep triangular emargination at middle of posterior margin, triangular area before emargination smooth; tergite 10 with two shallow notches

at apex, five long and a few setae different in size near apical margin or at apical portion; sternite 9 with slightly emarginate apex, numerous setae different in length at apical portion.

Aedeagus with median lobe narrowed apically, apex subacute. Paramere somewhat dilated in the middle, gradually narrowed into bluntly acute apical portion, apex slightly exceeding apex of median lobe; two apical setae at apical margin, four lateral setae near each lateral margin below apical portion; sensory peg setae on underside of paramere not numerous, forming two symmetrical longitudinal row, each composed of eight small black tubercles.

Female: unknown.

Holotype male, China, Sichuan, Dafending Nature Reserve, Mabian County (28°26'-28°45' N, 103°13'-103°26' E; alt. 2 200 m), 20 Aug. 2005, collected by

WANG ZhenJi.

Habitat and distribution. Habitat of the species is not clear now; it is known only from the type locality of Sichuan, China.

Etymology. The specific epithet is a patronymic in honor of the collector of the holotype, my postgraduate student WANG ZhenJi.

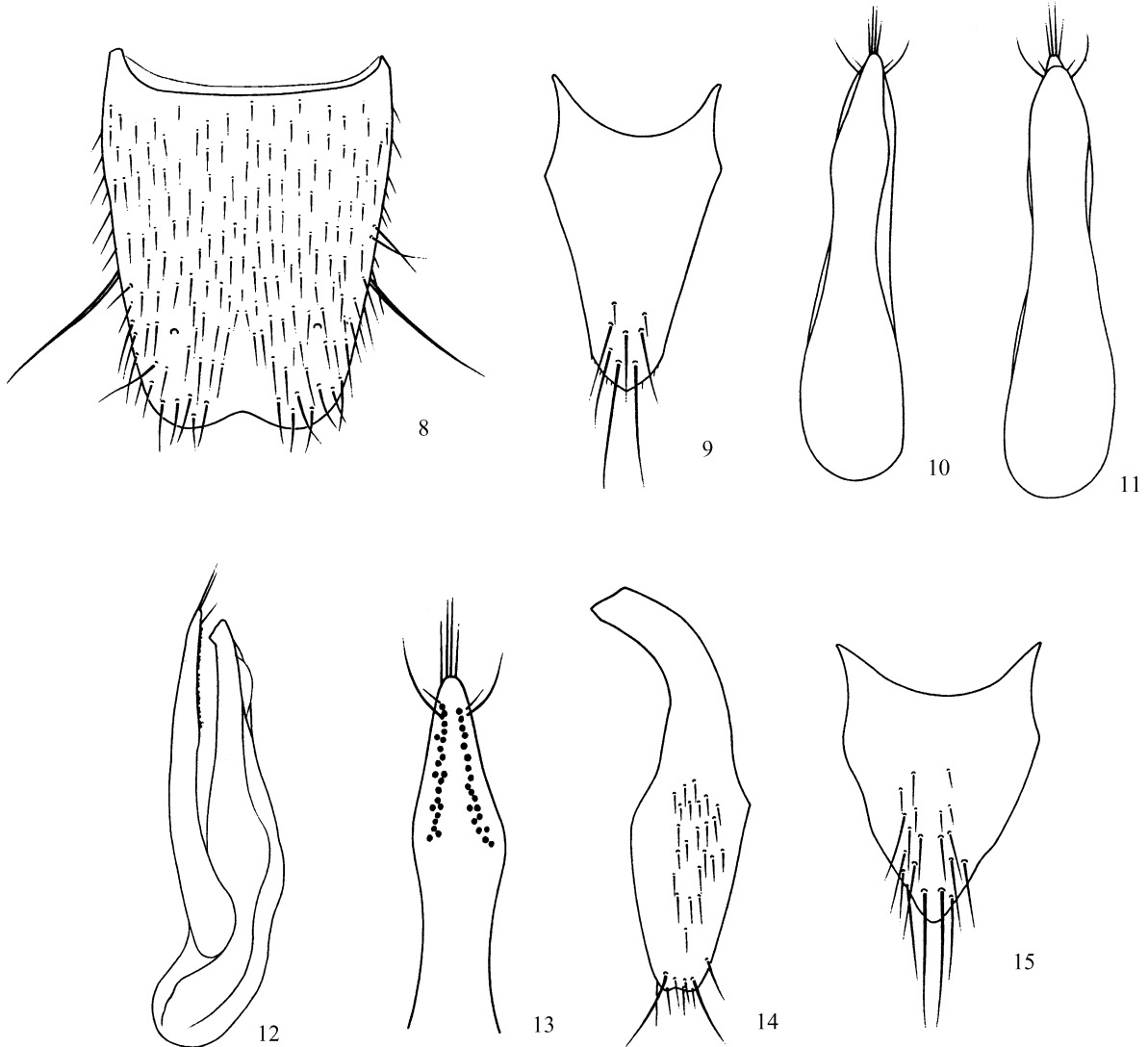
Quedius (*Distichalius*) *xian* **sp. nov.** (Figs. 8-15, 25-26)

Diagnosis. The species is closest to *Quedius* (*Distichalius*) *wolong* sp. nov. from Wolong Nature Reserve, Wenchuan County, but can be recognized by aedeagus slightly asymmetrical; median lobe slightly dilated before apical portion, apical margin broadly arcuate; two sensory peg setae row on underside of paramere each composed of less small black tubercles; male tergite 10 only with two long setae at apex.

Description. Head black; pronotum brownish black; elytra, abdomen and appendages brownish red to brown; pubescence yellowish brown to brownish black.

Length 5.2-6.2 mm.

Head subrounded, wider than long (ratio 1.13), distinctly narrowed posteriorly behind eyes, posterior angles obtuse; eyes large and convex, temples shorter than eyes (ratio 0.22); clypeus impunctate; two additional setiferous punctures between anterior frontal punctures, anterior frontal puncture almost against inner margin of eye, posterior frontal puncture close to posterior inner margin of eye, separated from it by distance shorter than diameter of puncture, large temporal puncture situated closer to posterior margin of eye than to posterior margin of head, two punctures between posterior frontal puncture and posterior margin of head; surface of head with fine and dense microsculpture consisting of transverse waves. Antenna



Figs 8-15. *Quedius* (*Distichalius*) *xian* sp. nov. 8-14. Male. 8. Sternite 8. 9. Tergite 10. 10-13. Aedeagus (10. Ventral view. 11. Dorsal view. 12. Lateral view. 13. Apical portion of underside of paramere). 14. Sternite 9. 15. Female tergite 10.

longer, but not reaching posterior margin of pronotum, segments 1-3 elongate and dilated apicad, segments 4-6 distinctly longer than wide, segments 7-10 about as long as wide, last segment feebly shorter than two preceding segments combined (ratio 0.92) and bluntly acute at apical portion.

Pronotum wider than head (ratio 1.32), slightly wider than long (ratio 1.11), widest at about posterior third and subarcuately narrowed anteriorly than posteriorly, anterior angles angulate, posterior rounded, lateral portions not flattened, finely bordered; dorsal rows and sublateral rows each with three punctures, posterior puncture of sublateral rows situated behind level of large lateral puncture; microsculpture similar to that on head, but finer and denser.

Scutellum impunctate, with fine microsculpture consisting of transverse striae.

Elytra subquadrate, longer (ratio 1.25) and wider (ratio 1.21) than pronotum, feebly broader than long (ratio 1.06), slightly widened posteriorly; punctuation and pubescence fine and dense, interspace between punctures without microsculpture.

Legs with segments 1-4 of protarsus strongly widened.

Abdomen with tergite 7 bearing whitish apical fringe; punctuation of abdominal tergites slightly finer than that on elytra, pubescence similar to that on elytra but slightly dense, transverse microsculpture extremely fine and dense.

Male. Sternite 8 with two long setae on each side, with moderately wide and deep triangular emargination at middle of posterior margin, triangular area before emargination smooth; tergite 10 with fimbriate and triangular apex, two long and a few setae different in size near apical margin or at apical portion; sternite 9 slightly emarginate at apex, two long and a few setae different in length at apical margin or apical portion.

Aedeagus elongate, slightly asymmetrical; median lobe slightly dilated before apical portion, apical margin broadly arcuate. Paramere constricted in the middle, then widened and gradually narrowed apicad, apex arcuate and slightly exceeding apex of median lobe; four apical setae at apical margin, two lateral setae near each lateral margin below apex; sensory peg setae on underside of paramere numerous, forming two irregular longitudinal rows.

Female. Segments 1-4 of protarsus similar to those of male, but slightly less dilated; tergite 10 subtriangular, apical portion narrowly arcuate, with two long and a few setae different in size near apical margin or at apical portion.

Holotype male, China, Sichuan, Mt. Emei (29°36'N, 103°29'E, alt. 3077 m), 31 July 1982, collected by GAO Xir-Fen. Paratypes 2 ♀♀, locality ditto, 28-30 July 1982, collected by WEI Fu-Wen.

Habitat and distribution. The species was found in humus soil; it is known only from the type locality of Sichuan, China.

Etymology. The specific epithet is the Chinese noun "xian" (celestial). It refers to the occurrence of this species on the celestial mountain Emei.

Quedius (*Distichalius*) *wolong* sp. nov. (Figs. 16-23, 27-28)

Diagnosis. The species is closest to *Quedius* (*Distichalius*) *xian* sp. nov. from Mt. Emei, but can be recognized by aedeagus distinctly asymmetrical; median lobe dilated before apical portion, then distinctly narrowed and hook-like curved toward paramere; two sensory peg setae row on underside of paramere each composed of more small black tubercles; male tergite 10 with three long setae at apex.

Description. Head black; pronotum brownish black; elytra, abdomen and appendages brownish red to brown; first antennal segment and basal portion of segments 2-3, femora paler; pubescence yellowish brown to brownish black.

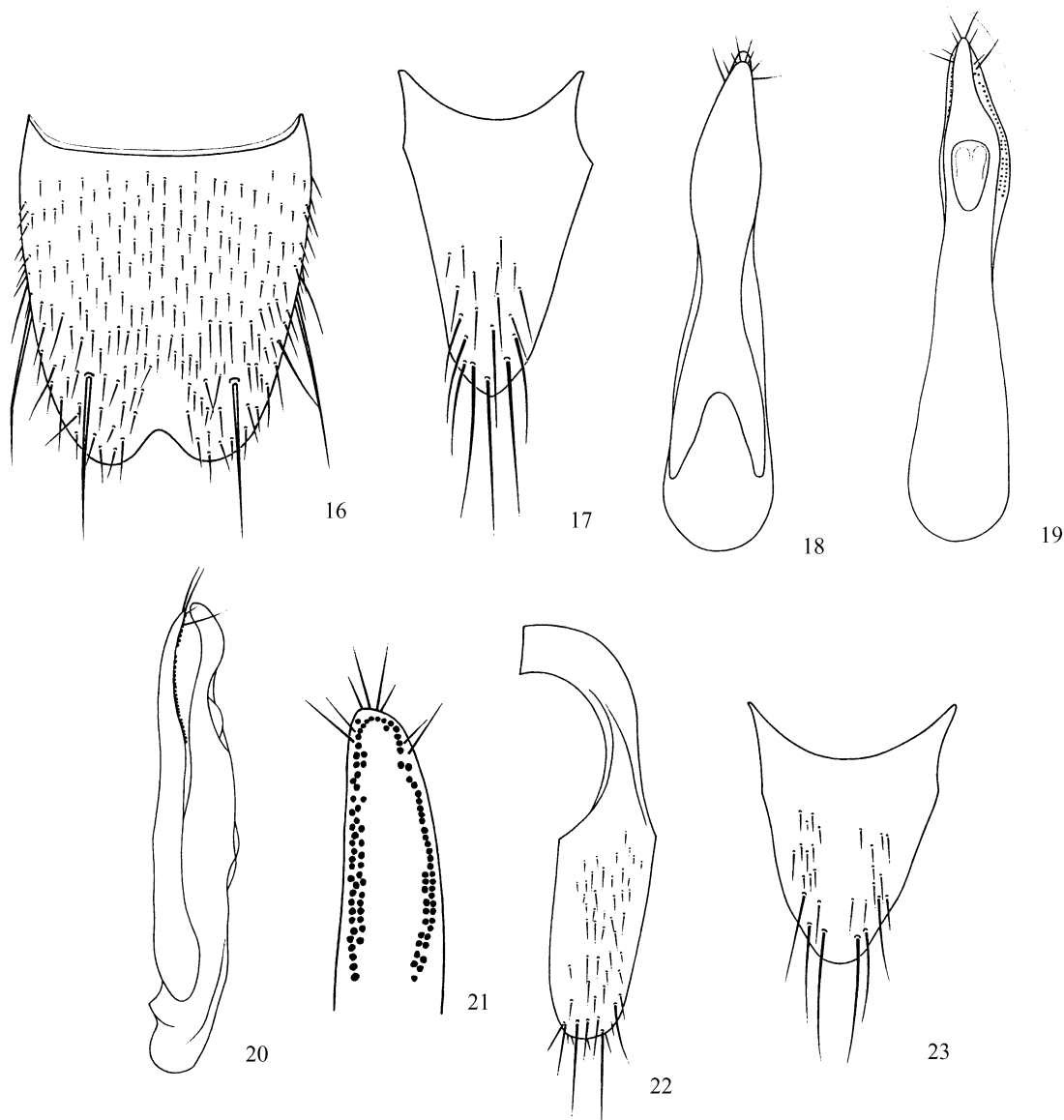
Length 5.6 mm.

Head subrounded, wider than long (ratio 1.23), distinctly narrowed posteriorly behind eyes, posterior angles rounded; eyes large and convex, temples shorter than eyes (ratio 0.25); clypeus impunctate; two additional setiferous punctures between anterior frontal punctures, anterior frontal puncture almost against inner margin of eye, posterior frontal puncture close to posterior inner margin of eye, separated from it by distance shorter than diameter of puncture, large temporal puncture situated closer to posterior margin of eye than to posterior margin of head, two punctures between posterior frontal puncture and posterior margin of head; surface of head with fine and dense microsculpture consisting of transverse waves. Antenna longer, but not reaching posterior margin of pronotum, segments 1-3 elongate and dilated apicad, segments 4-6 distinctly longer than wide, segments 7-10 about as long as wide, last segment about as long as two preceding segments combined and bluntly acute at apical portion.

Pronotum wider than head (ratio 1.25), feebly wider than long (ratio 1.09), widest at about posterior third and subarcuately narrowed anteriorly than posteriorly, anterior angles angulate, posterior rounded, lateral portions not flattened, finely bordered; dorsal rows each three and sublateral two punctures, posterior puncture of sublateral rows situated behind level of large lateral puncture; microsculpture similar to that on head, but finer and denser.

Scutellum impunctate, with fine microsculpture consisting of transverse striae.

Elytra subquadrate, longer (ratio 1.3) and wider (ratio 1.22) than pronotum, feebly broader than long



Figs 16-23. *Quatius* (*Distichalius*) *wdong* sp. nov. 16-22. Male. 16. Sternite 8. 17. Tergite 10. 18-21. Aedeagus (18. Ventral view. 19. Dorsal view. 20. Lateral view. 21. Apical portion of underside of paramere). 22. Sternite 9. 23. Female tergite 10.

(ratio 1.07), slightly widened posteriad; punctuation and pubescence fine and dense, interspace between punctures without microsculpture.

Legs with segments 1-4 of protarsus strongly widened.

Abdomen with tergite 7 bearing whitish apical fringe; punctuation of abdominal tergites slightly finer than that on elytra, pubescence similar to that on elytra but slightly dense, transverse microsculpture extremely fine and dense.

Male. Sternite 8 with two long setae on each side, with wide and deep triangular emargination at middle of posterior margin, triangular area before emargination smooth; tergite 10 bluntly triangular at apex, with three long and a few setae different in size near apical margin or

at apical portion; sternite 9 rounded or slightly oblique at apical margin, with two long and numerous setae different in length near apical margin or at apical portion.

Aedeagus distinctly asymmetrical; median lobe dilated before apical portion, then distinctly narrowed and hook-like curved toward paramere. Paramere constricted in the middle, then widened and gradually narrowed apicad, apex slightly oblique and not reaching apex of median lobe; four apical setae at apical margin, two lateral setae near each lateral margin below apex; two sensory peg setae row on underside of paramere each composed of numerous small black tubercles.

Female. Segments 1-4 of protarsus similar to those of male, but slightly less dilated; tergite 10 subtriangular, apex subarcuate, with four long and a few setae different

in size near apical margin or at apical portion.

Holotype male, China, Sichuan, Wolong Nature Reserve, Wenchuan County ($30^{\circ}45'-31^{\circ}25'N$, $102^{\circ}52'-103^{\circ}24'E$, alt. 2 400 m), 17 July 1983, collected by LU Ying. Paratypes: 4 ♂♂, 6 ♀♀, same data as the holotype.

Habitat and distribution. Habitat of the species is not clear now; it is known only from the type locality of

Sichuan, China.

Etymology. The specific epithet is one part of the Chinese name of the Wolong Nature Reserve, the type locality of the species, in apposition.

The annetens group

Quedius (*Distichalius*) *lin* Smetana (Figs. 29-30)

Smetana, 1995: 62; Heman, 2001: 3189; Löbl & Smetana, 2004: 656.

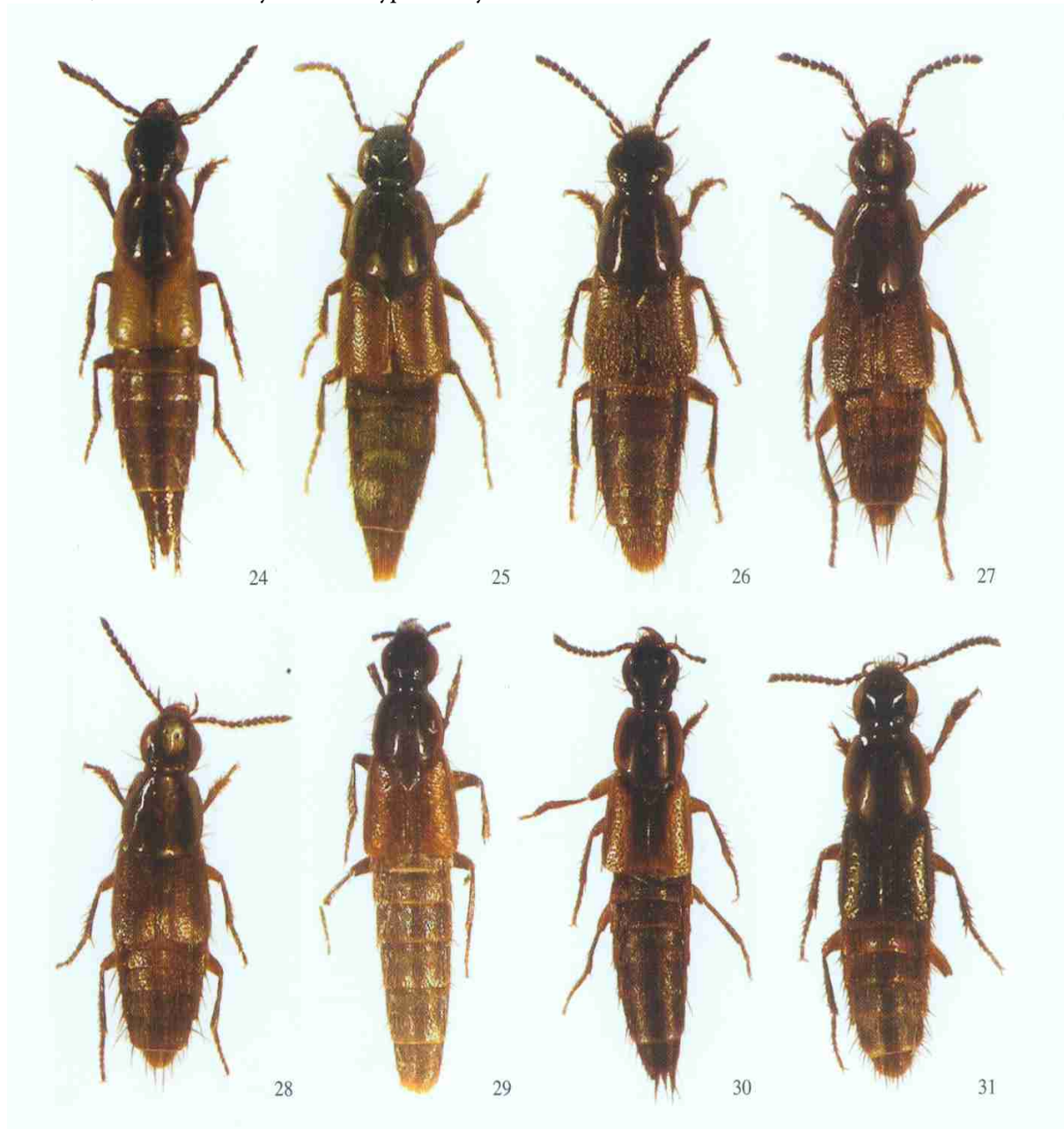


Fig 24. *Quedius* (*Distichalius*) *wangi* sp. nov., male. Figs 25-26. *Quedius* (*Distichalius*) *xian* sp. nov. 25. Male. 26. Female. Figs 27-28. *Quedius* (*Distichalius*) *wdong* sp. nov. 27. Male. 28. Female. Figs 29-30. *Quedius* (*Distichalius*) *lin* Smetana. 29. Male. 30. Female. Fig 31. *Quedius* (*Distichalius*) *pretiosus* Sharp, male.

Specimens examined. China, Sichuan, 1 ♂, 1 ♀, Mt. Jinfo, Nanchuan County ($28^{\circ}50'-29^{\circ}20'N$, $107^{\circ}-107^{\circ}20'E$; alt. 700-2 251 m), 10 May 1987, collected by ZHANG Cheng Lin.

Comments. This is first records of *Quedius*

(*Distichalius*) *lin* Smetana from the mainland China. It is at present known from Taiwan of China.

The chaterjeei group

Quedius (*Distichalius*) *pretiosus* Sharp (Fig. 31)

Sharp, 1874: 26; Bernhuer and Schubert, 1916: 431; Scheerpeks, 1933: 1458; Smetana, 1998: 317; Herman, 2001: 3246; Löbl & Smetana, 2004: 657.

Specimens examined. China, Chongqing: 93 ♂♂, 68 ♀♀, Mt. Jinyun, 180-952 m (29°41'-29°52' N, 106°17'-106°24' E), 1-13 July 1982, collected by GOU Zheng-Yue.

Comments. This is first records of *Quedius* (*Distichalius*) *pretiosus* Sharp from the Chongqing municipality. It is at present known from Fujian, Guizhou, Sichuan, and Zhejiang of China, also from Japan.

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literature.

REFERENCES

Herman, L. H. 2001. Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the second millennium. F VII, Bulletin of the American Museum of Natural History, 265: F 4 218.

Löbl, I. and Smetana, A. 2004. Catalogue of Palaearctic Coleoptera. 2: F 942.

Smetana, A. 1971. Revision of the tribe Quediini of America North of Mexico (Coleoptera: Staphylinidae). *Memoirs of the Entomological Society of Canada*, 79: vi+ F 303.

Smetana, A. 1988. Revision of the tribes Quediini and Atyagnathini. Part. II. The Himalayan Region (Coleoptera: Staphylinidae). *Quaestiones Entomologicae*, 24 (2): 163-464.

Smetana, A. 1995. Revision of the tribes Quediini and Tanygnathini. Part III. Taiwan. (Coleoptera: Staphylinidae). National Museum of Natural Science. *Special Publication Number*, 6: F 145.

Smetana, A. 1998. Contributions to the knowledge of the Quedina (Coleoptera, Staphylinidae, Staphylinini) of China. Part II. genus *Quedius* Stephens, 1829. Subgenus *Distichalius* Casey, 1915. Section 1. *Elytra*, Tokyo, 26 (2): 315-332.

中国颊脊隐翅虫属附点颊脊隐翅虫亚属三新种 (鞘翅目, 隐翅虫科, 隐翅虫亚科)

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摘 要 记述中国颊脊隐翅虫属 *Quedius* 附点颊脊隐翅虫亚属 *Distichalius* 3 新种, 王氏附点颊脊隐翅虫 *Quedius* (*Distichalius*) *wangji* sp. nov., 仙附点颊脊隐翅虫 *Quedius* (*D.*) *xian* sp. nov., 和卧龙附点颊脊隐翅虫 *Quedius* (*D.*) *wolong* sp. nov.。俯附点颊脊隐翅虫 *Q.* (*D.*) *lin* Smetana 和日本附点颊脊隐翅虫 *Q.* (*D.*) *pretiosus* Sharp 分别在中國大陸和重庆市是首次记

录。3 新种都隶属克什米尔附点颊脊隐翅虫群 the *kashmirensis* group, 该群为中国新纪录群。2 新纪录种, 俯附点颊脊隐翅虫和日本附点颊脊隐翅虫, 分别是连附点颊脊隐翅虫群 the *annectens* group 和查特附点颊脊隐翅虫群 the *chaterjei* group 的成员。

关键词 隐翅虫科, 颊脊隐翅虫属, 附点颊脊隐翅虫亚属, 克什米尔附点颊脊隐翅虫群, 连附点颊脊隐翅虫群, 查特附点颊脊隐翅虫群, 新种, 中国.

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